

5 1. **(CANCELLED)** A method for the optimization of communication between
a terminal device and at least one data source, both of which are
interconnected by a communication medium, which terminal device receives
data via said communication medium from said at least one data source,
which terminal device transmits communications to said data source via said
10 communication medium, said apparatus comprising the steps of:

producing a prioritized plurality of information segments from each of a
plurality of data items which are available from said at least one data
source; and

15 providing data to said terminal device, identifying a selected data item by a
first of said prioritized information segments of said selected data item.

5 2. **(CANCELLED)** The method of claim 1 wherein said step of providing data to said terminal device comprises:

transmitting, in response to user input at said terminal device transmitting data to said at least one data source identifying said selected data item, data
10 representative of a second of said prioritized plurality of information segments of said selected data item to said terminal device.

3. **(CANCELLED)** The method of claim 2 wherein said step of providing data to said terminal device further comprises:

15 transmitting, in response to transmission of said second prioritized information segment of said selected data item to said terminal device, data representative of at least a third of said prioritized information segments of said selected data item to said terminal device.

20 4. **(CANCELLED)** The method of claim 1 wherein said step of providing data to said terminal device comprises:

transmitting, in response to transmission of data to said data source
25 indicative of a user input at said terminal device which requests the entirety of said selected data item, data representative of all of said prioritized information segments of said selected data item to said terminal device.

5. **(CANCELLED)** The method of claim 1 further comprising the step of:

30 managing said plurality of data items which are available from said data source, to enable efficient access of said plurality of data items by a user at said terminal device.

5 6. (CANCELLED) The method of claim 5 wherein said step of managing
said plurality of data items comprises:

producing data representative of each of said plurality of data items, which
produced data is selected from the class of data item characterizing
10 information which includes: data item access information, data item
summary, data item title, data item keywords.

7. (CANCELLED) The method of claim 6 wherein said step of managing
said plurality of data items further comprises:

15 transmitting, in response to user input at said terminal device transmitting
data to said at least one data source requesting identification of all of said
plurality of data items to said terminal device.

20 8. (CANCELLED) The method of claim 6 wherein said step of managing
said plurality of data items further comprises:

transmitting, in response to user input at said terminal device transmitting
data to said at least one data source requesting identification of all of said
25 plurality of data items which satisfy criteria input by said user, data item
characterizing information of all of said plurality of data items which satisfy
said criteria input by said user to said terminal device.

5 9. **(CANCELLED)** The method of claim 6 wherein said step of managing
said plurality of data items further comprises:

transmitting, in response to user input at said terminal device transmitting
data to said at least one data source identifying selected ones of said
10 plurality of data items, data item characterizing information of said identified
selected ones of said plurality of data items to said terminal device.

10. **(CANCELLED)** The method of claim 5 wherein said step of managing
said plurality of data items comprises:

15 generating user interest profile data which is indicative of ones of said data
items which are likely to be of interest to a user at said terminal device.

11. **(CANCELLED)** The method of claim 10 wherein said step of generating
20 user interest profile data comprises:

calculating, in response to said user accessing ones of said plurality of data
items, similarity measures to identify other likely data items of interest to
said user.

25 12. **(CANCELLED)** The method of claim 10 wherein said step of managing
said plurality of data items further comprises:

searching, in response to said user interest profile data, said prioritized
30 information segments of all of said data items to identifying a selected data
item which most likely corresponds to said user interest profile data.

5 13. (CANCELLED) The method of claim 1, wherein a plurality of terminal devices are concurrently connected to said communication medium, further comprising the step of:

scheduling activation of said means for providing data to said terminal device
10 to sequentially serve said plurality of terminal devices according to a determined priority schedule.

14. (CANCELLED) The method of claim 13 wherein said step of scheduling comprises:

15 deciding what information segment is most likely usefully broadcast to each of said plurality of terminal devices.

5 15. (AMENDED ONCE) A method of providing a subscriber with program
information regarding a plurality of concurrently broadcast programs in a data
distribution system which comprises a multimedia broadcast medium which
concurrently carries a plurality of programs, which are made available to a
plurality of subscribers, which are connected to the multimedia broadcast
10 medium via respective terminal adapters which contain a directory member,
comprising the steps of:

storing an entirety of directory information in a memory located in said
multimedia broadcast medium;

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generating subscriber interest profile data which is indicative of ones of said
concurrently broadcast programs which are likely to be of interest to a
subscriber at said subscriber terminal associated with said subscriber;

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utilizing said subscriber interest profile data, excerpting a subscriber specific
subset of directory information from said directory information stored in said
memory;

25 transmitting said excerpted directory information to said terminal adapter
memory for storage therein; and

enabling a subscriber at said subscriber terminal device to access said
excerpted directory information stored in said terminal adapter memory.

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5 16. **(CANCELLED)** The method of claim 15 wherein said step of excerpting a subscriber specific subset of directory information comprises:

generating subscriber interest profile data which is indicative of ones of said concurrently broadcast programs which are likely to be of interest to a
10 subscriber at said subscriber terminal associated with said subscriber.

17. **(AMENDED ONCE)** The method of claim [16] 15 wherein said step of managing said plurality of data items further comprises:

15 calculating, in response to said subscriber accessing ones of said plurality of broadcast programs, similarity measures to identify other likely broadcast programs of interest to said subscriber.

18. **(AMENDED ONCE)** The method of claim [16] 15 wherein said step of
20 managing said plurality of data items further comprises:

searching, in response to said user interest profile data, said prioritized information segments of all of said data items to identifying a selected data item which most likely corresponds to said user interest profile data.

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19. **(NOT AMENDED)** The method of claim 15 further comprising the step of:

scheduling activation of said step of transmitting said excerpted directory
30 information to sequentially server said plurality of subscriber terminals according to a determined priority schedule.

5 20. (NOT AMENDED) The method of claim 18 wherein said step of scheduling comprises:

deciding what excerpted directory information is most likely usefully broadcast to each of said plurality of subscriber terminals.

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5 21. (NEW) A method of optimizing communication, comprising:

(a) providing at least one data source of a plurality of target object data items;

10 (b) providing a plurality of data terminals, each assigned to a particular one of a plurality of users;

(c) interconnecting said at least one data source and said plurality of data terminals over a communications medium;

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(d) automatically generating user interest profile data for each of said plurality of users which indicates which particular ones of said plurality of target object data items are likely to be of interest to each of said plurality of users;

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(e) searching, utilizing said user interest profile data, said plurality of target object data items to identify for each of said plurality of users at least one of said plurality of target object data items which most likely corresponds to said user interest profile data;

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(f) delivering to said plurality of data terminals particular ones of said plurality of target object data items over a plurality of alternative virtual channels prioritized in a manner based upon the results of said step of searching.

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5 22. **(NEW)** A method according to claim 21, wherein said plurality of target
object data items comprise at least one of:

- (1) multimedia information;
- (2) data items which are divided into a plurality of information
10 segments;
- (3) internet links;
- (4) video content;
- (5) MPEG-compressed streams of video.

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23. **(NEW)** A method according to claim 21, wherein said data terminals
comprise at least one of:

- (1) terminal adaptors;
- 20 (2) network interface devices;
- (3) mobile devices;
- (4) personal digital assistants;
- (5) network computers;
- (6) personal computers;
- 25 (7) set top boxes.

24. **(NEW)** A method according to claim 21, wherein said communications
medium comprises at least one of:

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- (1) a cable television system;
- (2) a digital broadcast system;
- (3) a video-on-demand system.

5 25. **(NEW)** A method according to claim 21, wherein said user interest profile data is maintained in said data terminals.

26. **(NEW)** A method according to claim 21, further comprising:

10 (g) providing a processor in each of said data terminals;

(h) utilizing said processor to select a plurality of data items as corresponding to said user interest profile data during said step of searching, and to assign data items to virtual channels for consideration by said users.

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27. **(NEW)** A method according to claim 26, wherein during said step of searching said processor compares directory information associated with each of said plurality of target data items to said user interest profile data to determine whether there is correspondence.

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28. **(NEW)** A method according to claim 21, further comprising:

(g) collecting target data use information, such as viewing habit data, and transmitting it through said communications medium for use in refining said

25 user interest profile data.

5 29. **(NEW)** A method according to claim 21, further comprising:

(g) providing at said at least one data source a directory of descriptive information for said plurality of target object data items;

10 (h) providing in a preselected manner for each of said plurality of users a portion of said directory of descriptive information which best matches the user interest profile of each of said plurality of users.

30. **(NEW)** A method according to claim 21, further comprising:

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(g) dividing each of said plurality of target data items into information segments; and

(h) during said step of delivering, transmitting said plurality of target data items in transmissions which utilize said information segments in order to
20 reduce the effective bandwidth required for service.

31. **(NEW)** A method according to claim 30, wherein, during said step of delivering, information segments of said plurality of target data items are prefetched in order to optimize transmission activities.

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32. **(NEW)** A method according to claim 31, wherein said information segments of said plurality of target data items are prefetched based upon known location data relative to said plurality of users.

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- 5 **33. (NEW)** A method of optimizing communication, comprising:
- (a) providing at least one data source of a plurality of target object data items;
 - 10 (b) providing a directory of information related to said plurality of target object data types;
 - (c) providing a plurality of data terminals, each assigned to a particular one of a plurality of users;
 - 15 (d) interconnecting said at least one data source and said plurality of data terminals over a communications medium;
 - (e) automatically generating user interest profile data for each of said plurality of users which indicates which particular ones of said plurality of target object data items are likely to be of interest to each of said plurality of users;
 - 20 (f) automatically generating a user-specific directory of said plurality of target objects for each of said plurality of users, utilizing said user interest profile data, which includes only segments of said directory of information which are pertinent to that particular user;
 - 25 (g) searching, utilizing said user interest profile data and said user-specific directory of said plurality of target data objects, said plurality of target object data items to identify for each of said plurality of users at least one of said plurality of target object data items which most likely corresponds to said user interest profile data;
 - 30 (h) searching, utilizing said user interest profile data and said user-specific directory of said plurality of target data objects, said plurality of target object data items to identify for each of said plurality of users at least one of said plurality of target object data items which most likely corresponds to said user interest profile data;

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(g) delivering to said plurality of data terminals particular ones of said plurality of target object data items prioritized in a manner based upon the results of said step of searching;

10 (h) providing in a preselected manner for each of said plurality of users a portion of said directory of descriptive information which best matches the user interest profile of each of said plurality of users.

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34. (NEW) A method according to claim 33, further comprising:

- (i) providing updated directories of information related to said plurality of target data items;
- 10 (j) instructing particular affected ones of said plurality of data terminals to delete user-specific directories;
- (k) upon detection of a request for directory information at a particular one of said plurality of data terminals, transmitting a new, updated user-specific directory to said particular one of said plurality of data
- 15 terminals.

35. (NEW) A method according to claim 34, further comprising:

- (l) periodically sending time-of-day and date information to said plurality of
- 20 data terminals to allow accurate scheduling and transmission.

5 **36. (NEW)** A method of providing a subscriber with program information
regarding a plurality of concurrently broadcast programs in a data distribution
system which comprises a multimedia broadcast medium which concurrently
carries a plurality of programs, which are made available to a plurality of
subscribers, who are connected to the multimedia broadcast medium via
10 respective terminal adapters which contain a directory memory, comprising
the steps of:

 storing an entirety of directory information, that describes said
plurality of concurrently broadcast programs, in a memory located in said
data distribution system;

15 producing a prioritized plurality of sets of information segments from
each of said plurality of concurrently broadcast programs which are available
from said data distribution system;

 excerpting a subscriber specific subset of directory information from
said directory information stored in said memory;

20 transmitting said excerpted directory information to said terminal
adapter directory memory for storage therein; and

 enabling a subscriber at said terminal adapter to access said excerpted
directory information stored in said terminal adapter directory memory.

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5 37. (NEW) The method of claim 36 wherein said step of excerpting a subscriber specific subset of directory information comprises:

generating subscriber interest profile data which is indicated of ones of said concurrently broadcast programs which are likely to be of interest to a subscriber at said terminal adapter associated with said subscriber.

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38. (NEW) The method of claim 37 wherein said step of generating subscriber interest profile data comprises:

calculating, in response to said subscriber accessing ones of said plurality of broadcast programs, similarities measures to identify other likely broadcast programs of interest to said subscriber.

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39. (NEW) The method of claim 37 further comprising the step of:

scheduling activation of said step of transmitting said excerpted directory information to sequentially serve said plurality of terminal adapters according to a determines priority schedule.

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40. (NEW) The method of claim 39 wherein said step of scheduling comprises:

deciding what excerpted directory information is most likely usefully broadcast to each of said plurality of terminal adapters.

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41. (NEW) The method of claim 39 wherein said step of providing data to said terminal adapter comprises:

transmitting to said terminal adapter, in response to said user inputting data at said terminal adapter to select one of said plurality of data items, data representative of a second of said prioritized plurality of sets of information segments of said selected one of said plurality of data items.

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5 42. (NEW) The method of claim 41 wherein said step of providing data to
said terminal adapter further comprises:

transmitting to said terminal adapter, in response to transmission of
said second of said prioritized plurality of sets of information segments of
said selected one of said plurality of data items, data representative of at
10 least a third of said prioritized plurality of sets of information segments of
said selected one of said plurality of data items.

43. (NEW) The method of claim 41 wherein said step of providing data to
said terminal adapter comprises:

15 transmitting to said terminal adapter, in response to said user inputting
data at said terminal adapter to request the entirety of said selected one of
said plurality of data items, data representative of all of said prioritized
plurality of sets of information segments of said selected one of said plurality
of data items.

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